ABSOLUTE DENTAL SERVICES

NADL Lab of the Year

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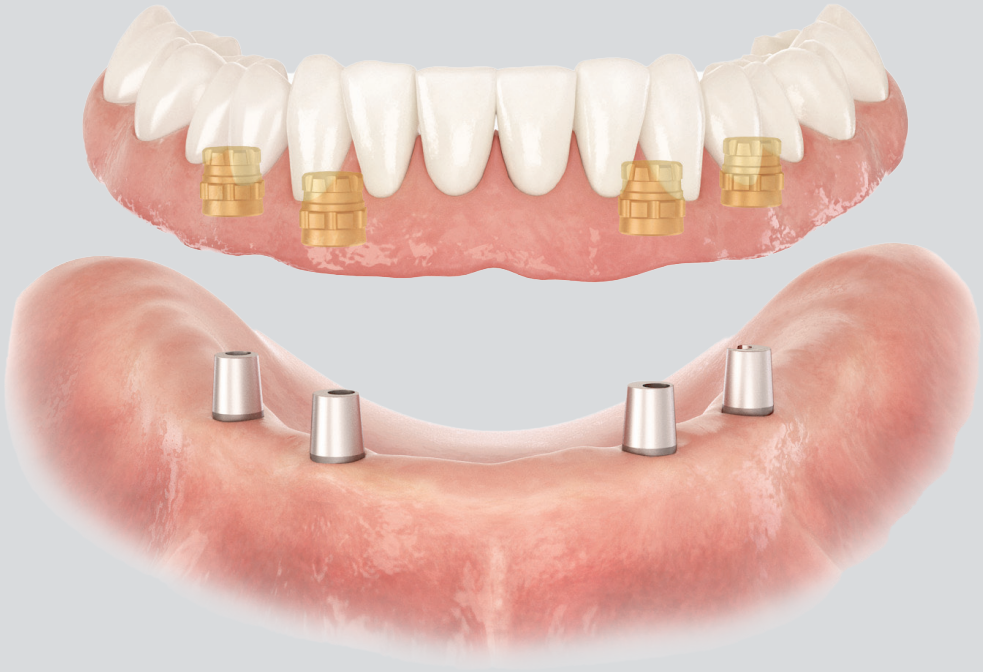
A Clinician's Guide to DIGITAL CONUS



Atlantis®
Provided by Dentsply Sirona Implants

CONUS CONCEPT PROVIDED BY

Dentsply Sirona Implants

www.AbsoluteDentalLab.com

The Digital Conus Concept

The Conus Concept is a friction-fit denture support system designed to give a patient the function and feel of a fixed hybrid while still maintaining the hygiene and lip-support of a removable denture.

In the early 2000's, Conus was hailed as the next generation of fixed-hybrid restorative solutions. However, because of the discrepancies contained in the analog workflow (and in many cases a misunderstanding of the processing procedures), the restorative challenges quickly overwhelmed the advantages of this extremely innovative system.

Today, the clinical data capture and laboratory processing is accomplished in a fully digital workflow. These clinical workflow and processing upgrades have solved many of these challenges and once again made this an option for many patients who do not qualify for a traditional fixed hybrid.

The Conus system is a hybrid implant supported/retained system making it fulcrum adverse. This is an advantage in cases where implant placement would normally cause detaching of clip retention systems. Conus can be processed with or without a vestibule and does not require a palate for stability. It is available on most popular internally hexed implant systems on the market today and requires a minimum of four implants per arch.

This protocol manual addresses many of the challenges historically found in this extremely innovative restorative option. By closely adhering to the following real-world established, clinical, and technical procedures contained in his protocol manual, most of the historical challenges can be addressed and overcome.

My team and I are very excited to assist you with your next Conus case and look forward to collaborating with you on restorations utilizing this state-of-the-art solution.

Conrad J Rensburg



Conrad J. Rensburg
N.D. & N.H.D. Tech Pret.



Conus

Conus is a true hybrid implant-retained tissue-supported removable prosthesis. It offers a patient the feel and function of a fixed implant retained hybrid with the added cleanse-ability of a removable denture.

Conus is a friction-retained denture, supported by custom, patient-specific titanium CAD abutments milled at a 5° taper. These abutments can compensate for up to 30° of angle correction directly from the implant level. Retention is supplied by precision milled SynCone® gold copings and Conus is available for most popular internally hexed implant systems.

Conus requires a minimum of four implants per arch and can accommodate a shallow Anterior-Posterior spread without compromising retention or function. This feature makes Conus an ideal solution for patients with bone deficiencies in the posterior and the final prosthesis can be processed with or without a vestibule for lip-support.

FIRST CLINICAL APPOINTMENT

Digital Data Gathering

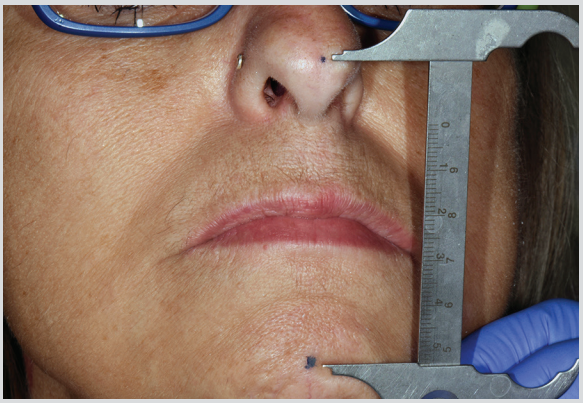
This workflow utilizes the existing denture as a prototype starting point. The denture can be:

1. An immediate denture delivered after surgery
2. An existing tissue supported denture

The laboratory will make bite and esthetic adjustments based off the diagnostic notes and smile pictures provided by the clinician. Therefore, this starting denture does not need to be representative of the patient's final smile expectations.

It is crucial to wash-reline (refresh) the existing denture's intaglio surface before registering the bite and taking smile pictures. Only remove the denture from the mouth for a 360 scan after all records have been registered.

If patient presents without a denture, please contact the lab for information on a bite-rim workflow.



1. Register the patient's VDO with nose and chin marks



2. Wash reline the existing denture and recheck the VDO. Reline using a light body PVS or soft reline material



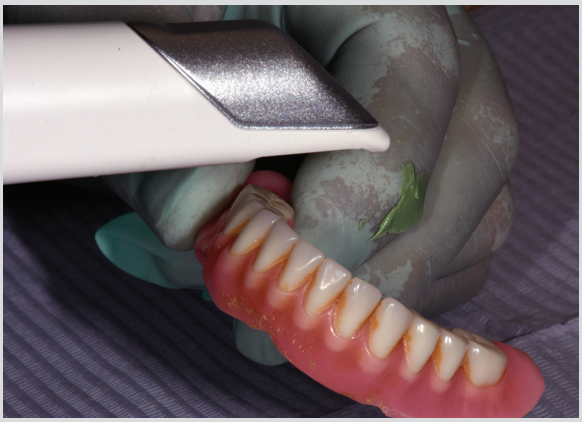
3. Scan the opposing



4. Scan the bite (before removing the relined denture)



5. Register smile pictures with the patient standing flat against a wall. Include the eyes, ears, nose and chin. High smile, lips at rest and retracted



6. Remove the denture from the mouth and scan 360



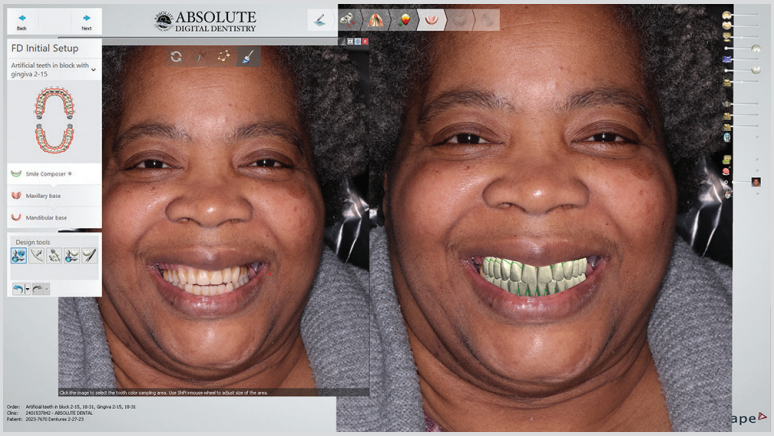
7. After the above data sets have been registered, place the appropriate implant Atlantis IO scan flags (digital impression copings) into the implants. Atlantis also accepts Elos and 3Shape scan flags for Conus application. Ensure accurate seating before digitizing the arch. Capture as many anatomical landmarks with the IO scan flags as possible.

Transfer all of the above data sets to the laboratory. Request a digitally fabricated prototype try-in denture to verify the diagnostic changes. If no changes were needed from the original denture, this step can be skipped, but a try-in is always recommended to achieve patient sign-off.

The final denture will be an exact copy of the prototype try-in, therefore this step is instrumental in ensuring a predictable final delivery.

REMOTE REVIEW AND DESIGN

The laboratory will make design changes to the original "existing" denture scan data as requested by the clinician and patient. After all the requested changes are made the proposed design will be superimposed over the patient's smile pictures and the restorative clinician will be invited to an optional digital remote review. During this review the clinician and technician will final design the patient's new smile with a collaborative team approach. If only small cosmetic changes are requested, the final smile can be designed without this review process. In cases where the original data set required significant changes like mid-line shifts, tooth shape changes, bite adjustments etc. this review process plays an integral role in a predictable prototype try-in and final delivery.



Proposed diagnostic design for review

SECOND CLINICAL APPOINTMENT

Prototype try-in

After the proposed design is approved by the restorative clinician, the laboratory will print a PMMA prototype try-in. It is important to note that this device is a prototype and an exact copy of the final prosthesis and not intended as an esthetic try-in. This device precisely transfers the digital design data to the analog try-in and very rarely requires adjustments. If any changes to fit, length and thickness of vestibules, tooth positions, mid-line etc. are required they are made directly to this prototype device. These changes can be additive or reductive (PVS refresh to adjust the fit or shortening/thinning a flange etc.). These changes will be directly transferred to the final prosthesis making this a very valuable step in ensuring an effortless final delivery. If the original "existing" denture data required only small cosmetic changes, this prototype try-in appointment is not necessary.



Printed prototype



Intra-oral prototype try-in

CONUS COMPONENT FABRICATION

If the prototype is approved by the patient and no bite changes etc. are required by the clinician, an email to the laboratory instructing final processing is all that is required. The prototype can now be discarded. If any changes or adjustments are required, the adjusted prototype is captured by 360 digitizing it and returning the new data to the laboratory for final processing.

The laboratory will use this data to process the final Conus denture. To facilitate an efficient chairside pick-up, the denture is designed with pre-printed receptacle areas to accommodate the SynCone® gold retentive caps. The data will also be used by Atlantis Suprastructures to design the custom Conus abutments and positioning transfer jig.

The case, with all the required components, will be returned for chairside retentive cap pick-up and final delivery of the Conus denture.



High-water sleep denture

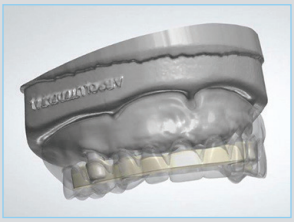
COMPONENTS DELIVERED

- ➔ Final Conus Denture w/ internal support-structure. Lucitone digital print base with monolithic tooth-structure for strength and stability
- ➔ Custom CAD Conus abutments with positioning/placement jig
- ➔ Custom Absolute removing tool, SynCone polymerization sleeves and SynCone gold retention caps
- ➔ The clear high-water sleep denture is a friction fit denture intended to cover the Conus abutments when the patient is sleeping. This denture is printed from polymer nightguard material and considered a disposable sleep device. It is digitally archived by the laboratory and therefore easily (and economically) replaceable. It utilizes polymer to abutment friction in lieu of SynCone caps.

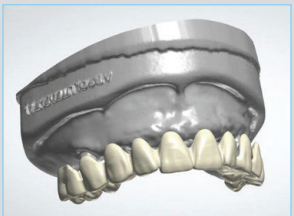
ABSOLUTE INTEGRATED CONUS SUPPORT

Absolute's digital dentistry team uses a proprietary design STL split file technique to support all Conus Lucitone printed dentures. This internal support is fully encompassed between the printed monolithic tooth structure and Lucitone polymer printed denture base. This technique allows for the alloy (or techno-polymer) support to be completely integrated between the tooth and base structures of the prosthesis. Even though the Lucitone polymer material is twice as strong as processed Lucitone high impact acrylic, an internal support structure is crucial for the long-term success of the printed implant supported dentures.

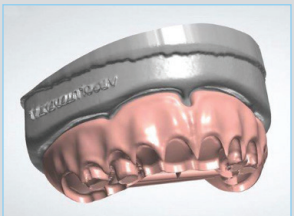
Digital Split File



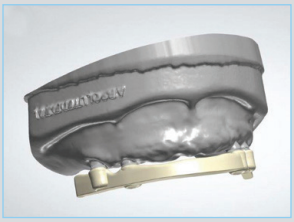
Internal Support Design



Tooth Structure File



Denture Base File



Internal Support File



Printed Tooth Structure



Printed Lucitone Base



Custom SLM Kobalt Frame

forever denture
your FOREVER smile



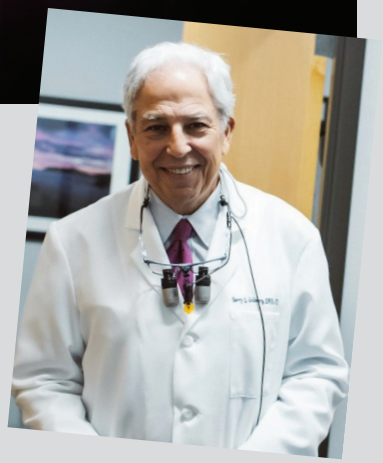
Internal Stack Design



Internally Encompassed Design



Lucitone Stacked Conus Denture



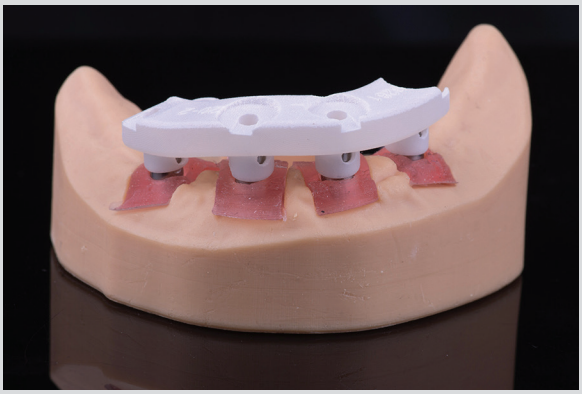
Clinical pictures courtesy of
Dr Barry Goldenberg
St Louis, Missouri

THIRD CLINICAL APPOINTMENT

Component Pick-up and Final Delivery



1. Remove the healing abutments



2. The abutments and transfer jig will be shipped on the model for orientation



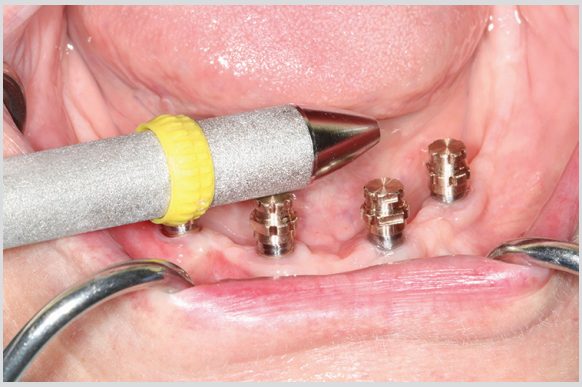
3. Unscrew abutments from model and test group draw. If all do not draw as a group, deliver the abutments in groups with draw. Abutments are numbered and indexed for easy identification



4. Torque to implant manufacturer specifications

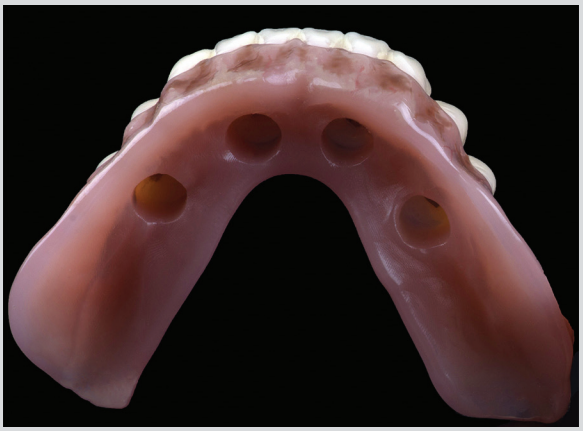


5. Remove the delivery jig

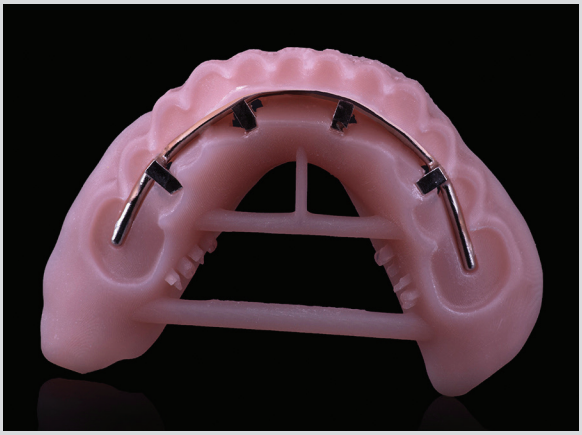


6. Place the SynCone gold retention caps on the conus abutments. Tap with an intra-oral mirror handle to activate. Do not remove before pick-up

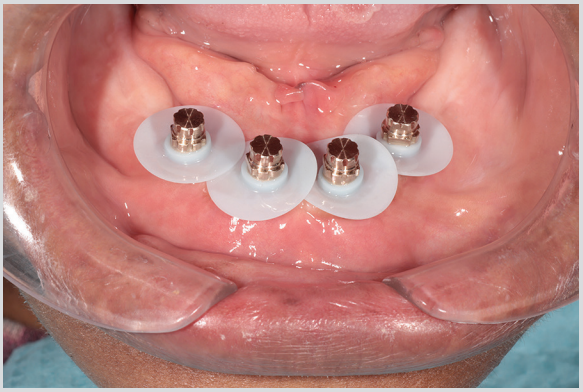
** After activating the SynCone caps with the intra-oral mirror handle, test the retention by pulling up on them. SynCone caps should not dislodge when pulling on them. If a SynCone cap releases, activate it again by tapping firmly on it. When activation on all is confirmed, proceed to pick-up step.*



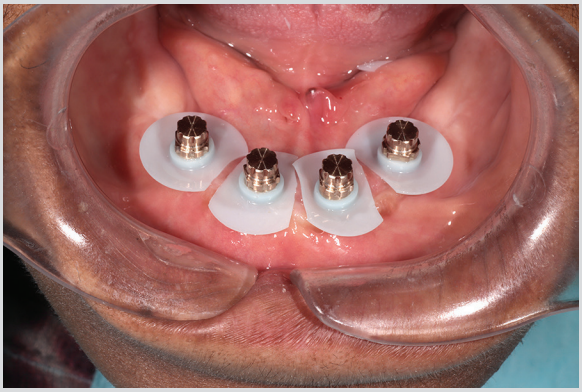
7. Absolute Conus dentures are digitally processed with pre-cut receptacles to accommodate the SynCone *pick up positions*



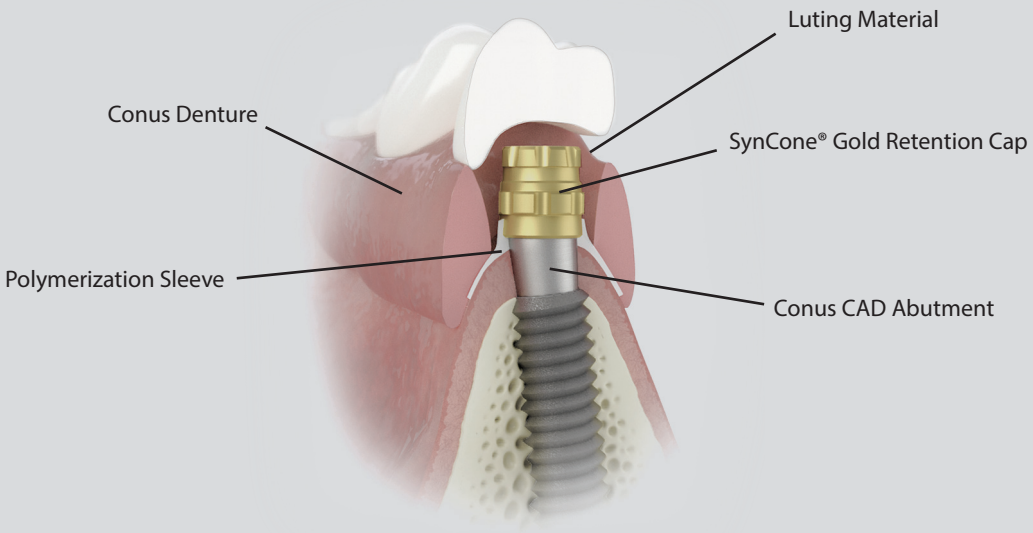
8. Absolute Lucitone Conus dentures are internally supported with an integrated bar



9. Place polymerization sleeves over the gold SynCone *caps*



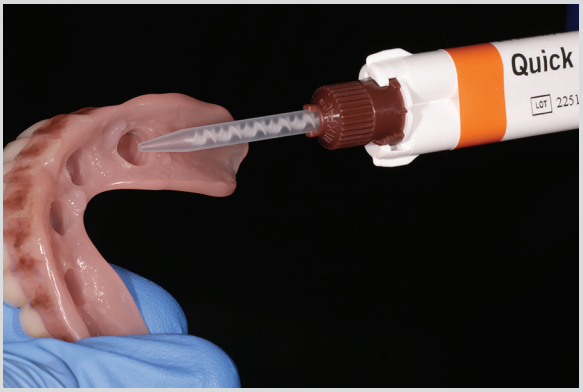
10. Cut polymerization sleeves to not overlap



Conus system make-up. Please note: the position of the polymerization sleeve, as shown on the above picture, is crucial for a predictable pick-up of the gold SynCone *caps inside the denture*

Denture retention pick-up

Even though the SynCone cap receptacle areas are digitally pre-planned and printed into the denture, it is very important to verify a passive fit over the abutments and caps before continuing with this pick-up process. If any interference is noticed, adjust the denture to relieve any obstructions and ensure a completely passive fit before continuing. Compressing tissue under the denture during the pick-up process is the biggest cause of post delivery retention issues. It is therefore crucial to lightly guide the patient into occlusion during this stage.



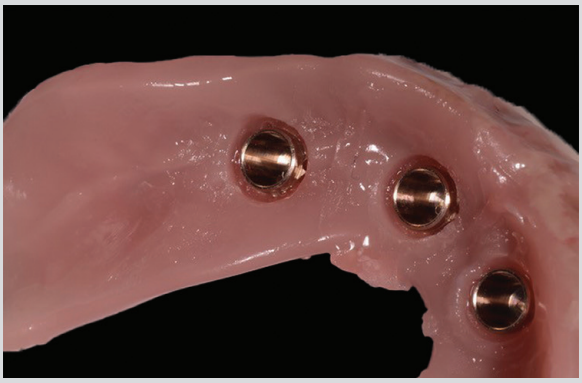
11. Fill the receptacle areas using a self cure luting material. Seat the denture and guide the patient into light occlusion



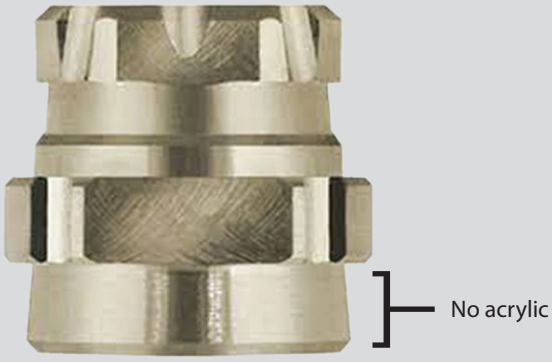
12. After curing remove the denture with the luted SynCone *caps inside*



13. Remove the polymerization caps and clean up any acrylic flash



14. Verify an opening exists between the gold SynCone *caps and acrylic. This gap is crucial for long-term retention.* ***Do not*** *fill this in with acrylic.*



Gold SynCone® Cap

Final Delivery

Seat the Conus denture after clean-up and ask the patient to bite down firmly to activate the SynCone retention. It is important to explain that friction-fit retention (being more stable than a traditional clip-retention) is expected to require more effort to dislodge. This is achieved by using the supplied removing tool. Hook the tool under the denture flange and tug lightly in the anterior followed by the left and right posterior sections, repeat if necessary. Educate the patient on the importance of removing the denture daily and sleeping only in the supplied clear replica prosthesis.







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your FOREVER smile

ABSOLUTE FOREVER DENTURE

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Lucitone Digital Print Laboratory

Absolute Dental Lab has been actively involved with Lucitone Digital Print since the original product launch in 2019. Today, with more than 5000 dentures successfully delivered by the Absolute team, clinicians can attest to both the clinical workflow and material advantages. All Absolute Forever Dentures are digitally archived for future use. This allows Absolute clinicians the ability to replace a lost or broken denture within 24 hours and reprocess a new denture within two clinical appointments. All Absolute Forever Dentures include a one-time 12-month full replacement, no repair, warranty.

Absolute Dental Lab



Established in 1994, Absolute Dental Services started as a small fixed prosthetics lab in the Triangle area of North Carolina. More than two decades later, Absolute's restorative focus is much broader but their attention to product detail and exceptional customer service has not changed. In 2019, Absolute Dental was voted NADL laboratory of the year by their peers.

Absolute is a true full-service partner, with a team nationally and internationally renowned for their expertise in creating world-class esthetics. Their use of cutting-edge technology in CAD and milling, as well as their extraordinary dental implant, guided surgery and high-end removables teams, enables them to deliver lifelike and functional dental prosthetics in even the most complex cases.

Serving their customers with Absolute Excellence has always been the primary focus of the Absolute team. Their vision and dedication is reflected in the company motto, *Perfection Is Not Optional*!

They welcome clinicians from all over the country to become part of the Absolute family!

CONRAD J RENSBURG, *N.D & N.H.D in technology*

Conrad J. Rensburg is the Director of Absolute Dental Services, headquartered in the Triangle region of North Carolina, with multiple branches across the southeastern United States and proud member of the Denbright Dental Lab Group. He graduated with a 4-year Baccalaureate degree under full scholarship from Pretoria Tech in 1992. He has specialized in fixed dental prosthetics, with a focus on dental implants, since the early 90's. He is a member of the AO, ACP, ITI and the PEERS association. As a CE-accredited speaker since 2002, he has presented at hundreds of events across the USA. These include the American College of Prosthodontists, the Academy of Osseointegration, the PEERS Association, DS World, as well as multiple European and US symposia. His passion for sharing knowledge is evident in the numerous study club events at which he presents every year.

Conrad's emphasis as a speaker is in keeping today's clinicians abreast with the latest advancements in restorative protocols and digital workflows related to removable and fixed prosthetics. His presentations focus on the restorative advantages of digital dentistry, covering guided surgery, latched and digital conversion workflows, screw-retained restorative solutions, digital denture protocols, and full-arch hybrid implant rehabilitations. As the author of multiple peer-reviewed articles, his research focuses on digital implant protocols, fixed hybrid implant techniques, digital removable dentistry, and modern digital communication.

Conrad can be contacted at absolutedentallab.com or conrad@absolutedentalservices.com





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